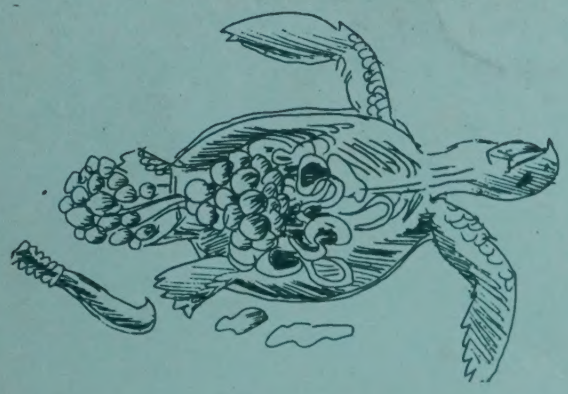
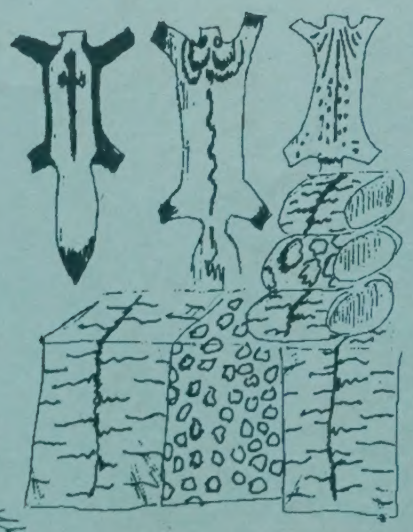
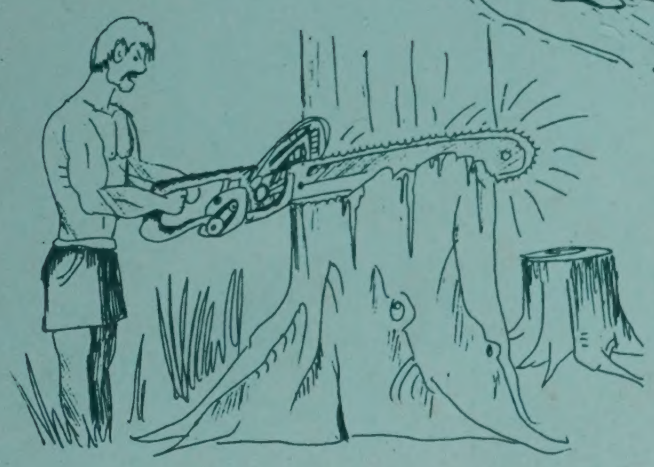
TRADE IN WILDLIFE

(Courtesy - TRAFFIC-India/WWF-India)







Bombay Natural History Society

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The **GREEN TEACHER'S KIT** is designed as a resource manual for teachers, advisers and others responsible for Environmental Education in Secondary Schools. It aims to enhance the teacher's aptitude and attitude towards the approaches in Environment Education. It especially equips the teachers with authentic knowledge on natural history which is vital for nature education.

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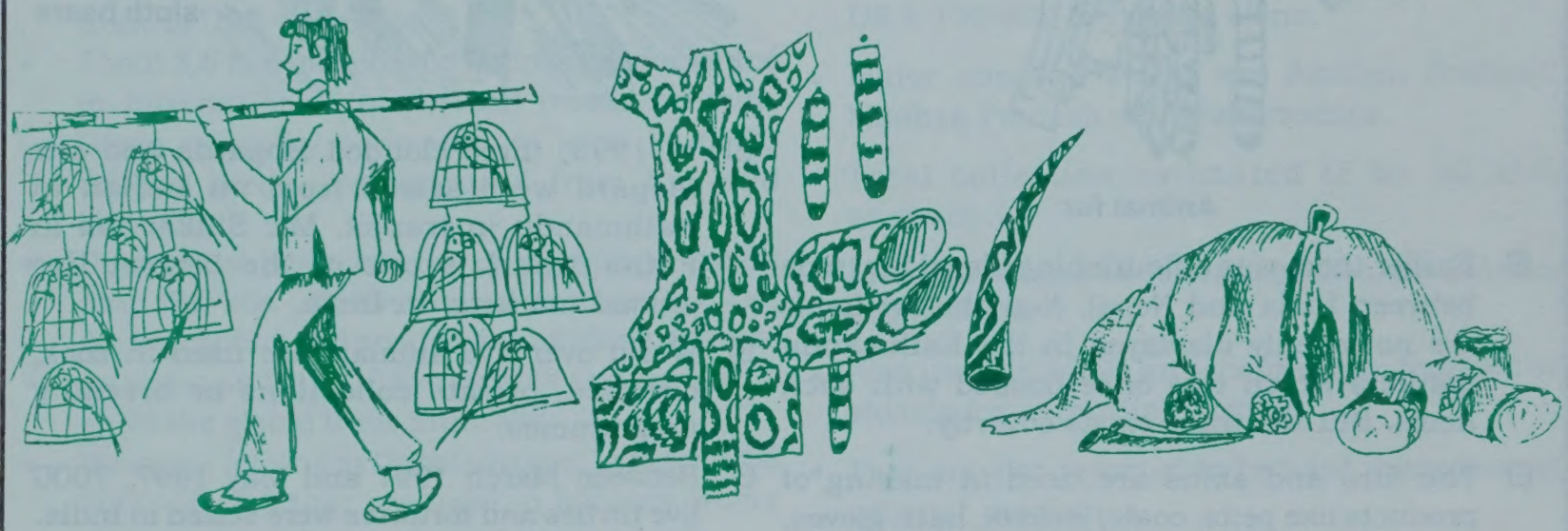
The Bombay Natural History Society was founded in 1883. Today it is the largest non-governmental organisation (NGO) in the Subcontinent engaged in the conservation of nature and natural resources, education and research in natural history, with members in over 30 countries.

[1] STARTLING FACTS ABOUT WILDLIFE TRADE: A Global View

Trade in wildlife and its derivatives, worth more than US$ 20 billion annually, is a global phenomenon with serious ramifications for the conservation of biodiversity in all its beauty and variety. Illegal business, illegal wildlife trade is reportedly next in value to narcotics and illegal arms trade. India, being a source country and an avenue for transiting goods, has always been an important centre on the world trade map. The United States is the largest consumer of wildlife in the world. Uncontrolled hunting of wildlife for pleasure, food, furs, skins, horns, tusks etc. pose a serious threat to the survival of wildlife. Remember Cheetah was hunted to extinction! The illegal trade in animal skins has been responsible for the destruction of a large number of tigers, leopards, deer, fishing cats and snakes, as well as birds with beautiful plumage. Elephants are hunted for ivory and rhinos for their horns wild orchids and medicinal plants, butterflies and corals, all form part of the trade, making India a focal point in more ways than one. In order to deal with this challenge, the Government of India has banned hunting of wild animals and trade in their parts. Despite this, commercial activity continues in a covert and illegal manner. Added to this is the practice of trade in exotic mammals, birds and reptiles and use of wild animals in biomedical research.



List of Countries involved in Wildlife Trade

MAJOR EXPORTERS				MAJOR IMPORTERS	
1.	Argentina	16.	Paraguay	1.	Canada
2.	Australia	17.	Peru	2.	China
3.	Bolivia	18.	Philippines	3.	European Union
4.	Brazil	19.	Senegal	4.	Hong Kong
5.	Central African Republic	20.	South Korea	5.	Japan
6.	China	21.	Sudan	6.	North & South Korea
7.	Columbia	22.	Taiwan	7.	Singapore
8.	Congo	23.	Tanzania	8.	Taiwan
9.	Guyana	24.	Thailand	9.	United Kingdom
10.	Honduras	25.	Turkey	10.	United States
11.	India	26.	United States	11.	United Arab Emirates
12.	Indonesia	27.	Former USSR	12.	Yemen
13.	Mexico	28.	Zaire		
14.	Myanmar				
15.	Nepal				

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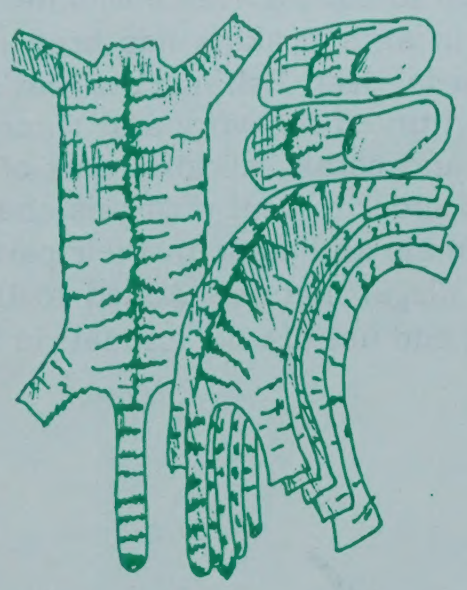
[2] FURS & SKINS

- The wild caught fur trade in India deals with at least 20 species of animals. Of these, 18 species are endangered or vulnerable. They are snow leopard, common leopard, clouded leopard, lynx, fishing cat, leopard cat, desert cat, rusty spotted cat, palm civet, grey wolf, Indian fox, red fox, jungle cat, small clawed otter, smooth coated otter and jackal.



Animal fur

- Earlier there was a flourishing illegal fur trade between India and Nepal. Now the fur items are not openly displayed in the Kathmandu markets which was once flooded with such items. But the trade exists covertly.
- The furs and skins are used in making of products like pelts, coats, jackets, hats, gloves, short and long coats. Also small items like wallets, belts walking sticks and in trimmings in fashion garments.

[3] LIVE ANIMALS

- Globally, as many as 80-90% of the primates used in medical research come from the wild.
- USA, the largest primate market in the world imports 13000-17000 live animals per year.
- Nearly 50,000 live Indian pythons were imported by USA between 1977 and 1983. The pythons would sell for US$ 500 in USA and for as much as US$ 2000 in Europe and Japan.
- Although all legal trade in live animals and reptiles is banned in India, illegal smuggling continues particularly through the land borders with Pakistan, Bangladesh, Myanmar and Nepal and also through sea routes.
- In 1992, 200 Indian star tortoises worth nearly US$ 80,000 were seized in the Netherlands bound for USA.
- Bear cubs collected in India are regularly smuggled to Southeast Asian countries via Nepal, and to Pakistan for bear-baiting. Other mammals traded are slow loris, red panda, hoolock gibbon, clouded leopard, leopard cat for pet and larger cats for circus.

Performing sloth bears

- In 1993, three clouded leopards and one leopard were seized from an Indian at Kathmandu in transit. Mir Shikar toli in Patna(Bihar) is one of the largest live animal markets, in India.
- World over live animals are used in zoos, circuses, private collections or breeding programmes.
- Between March 1997 and May 1997, 7000 live turtles and tortoises were seized in India.
- Thousands of spiny tailed lizards were collected in western India and used for extracting oil supposed to have aphrodisiacal properties.

Quacks with spiny lizards

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Birds used in Falconry

[4] LIVE BIRDS

- The earliest record of trade in Indian birds is of 400 B.C, when a Greek physician took a bird from India to teach it Greek.
- The minimum declared value of the world bird trade is US$ 44 million.
- About 3.5 to 5 million wild birds are documented in international commercial trade annually. Given mortality estimates, at least 14 to 20 million birds are captured from the wild annually.
- On a global basis, one out of three birds caught from the wild survives on an average; one dies during capture and another during transportation.
- As many as 500,000 live parrots and parakeets enter the global trade annually.
- Peregrine falcons in Dubai can cost between US$ 7000-10,000 that are used in falconry where they are used for hunting of smaller birds.
- Between 1970 and 1976 India exported nearly 13 million live birds at an average of 18.5 million birds annually.
- Following the ban on trade in wild caught birds in 1990-91, more than 50,000 birds have been seized from northern India (mainly Delhi).

Pet birds

- Between 1994-1995 about 1.2 million birds of Indian origin were reportedly smuggled from Kathmandu to European countries.
- Around 250 native species of our country are trapped and traded for seven different purposes like pet, food, release, falconary, zoo, black magic, medicine and taxidermy.
- As per the Wildlife Protection Act, 1972, keeping and sale of wild birds is prohibited.

[5] ANTLERS AND HORNS

- Antlers are characteristic of deer while antelopes have horns. Some of the endangered deer and antelopes are kashmir stag, swamp deer, musk deer, four horned antelope, blackbuck.
- Antlers are branched, solid and are usually shed every year unlike horns, which are hollow, unbranched and permanent
- The antlers of deer such as chital, sambar, barking deer and swamp deer are found in the trade
- The main export of antlers or products from India is to Europe, Australia, East Asia and U.S.A.
- In 1993 India exported antlers worth more than US $ 100,000 to Taiwan alone.
- Major supplier states are Andhra Pradesh, Madhya Pradesh and Maharashtra.
- Total collection estimated to be 20 tons annually.
- Antlers are used in cutlery handles, pistol butts and buttons.
- Also used as whole antlers or scrap, trophies or shields for decorating houses.
- They are also reported to be used in traditional oriental medicines.

Wildlife Products

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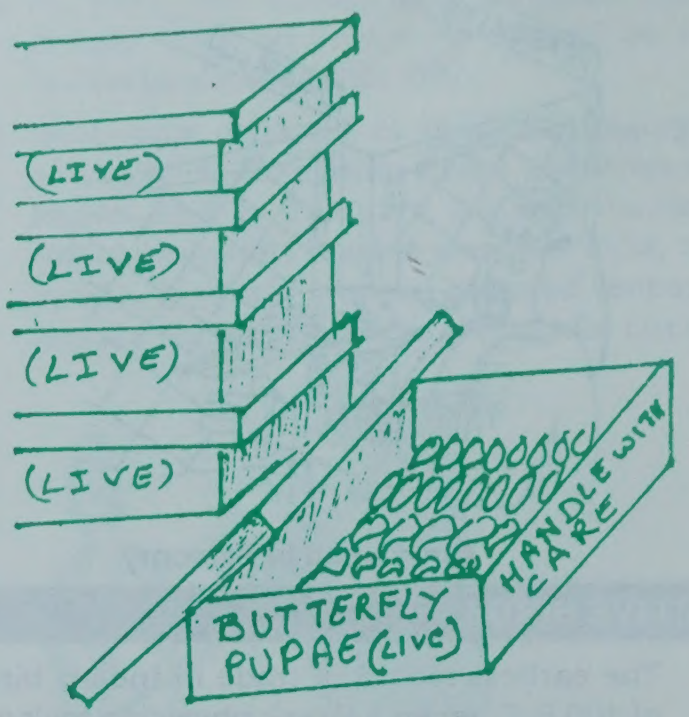
[6] BUTTERFLIES

- Trade in butterflies is estimated to be worth US$ 100 million per year.
- Taiwan exports upto 500 million butterflies per year many of them are collected from all over Asia.
- Banded Apollos found in Ladakh region, are much sought butterfly species. One specimen can fetch upto thousands of dollars in Europe and USA.

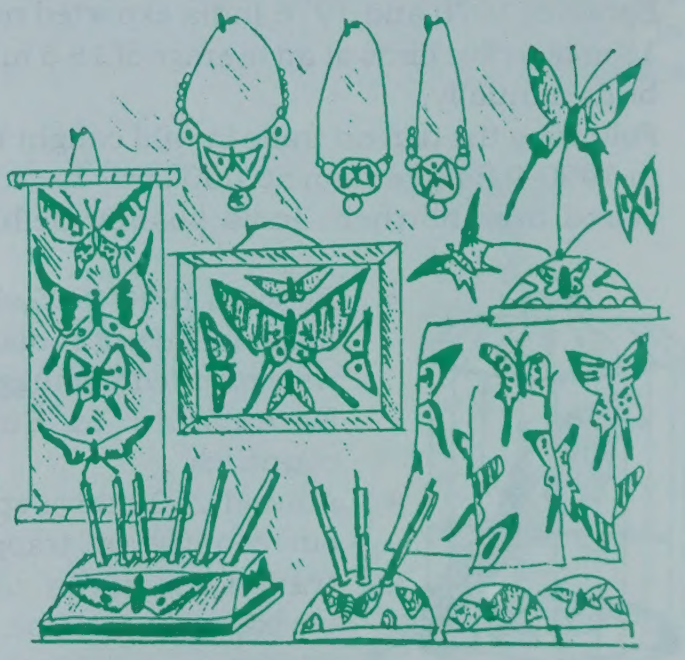
Butterfly cabinet

- Butterflies of swallowtail group are specifically targetted by the collectors. Butterflies such as Bhutan Glory, Apollos, Kaiser-I-hind, Birdwings and other swallowtails are threatened and rare.
- Butterfly plaques used as drawing room hangings, ornaments, pen holders, table mats and other decorative items are sold in Shillong and Guwahati ranging between Rs. 90/- to 500/-.
- Also as entomological research specimens to various countries, which usually end up in museums and in private collections.
- Dead specimens are mostly traded to Germany, Japan, Switzerland, England and USA.
- Live specimens, eggs and pupae by the butterfly houses are traded to USA, Japan, Europe, Malaysia and Singapore.



Cartons of butterfly pupae

- Main collection centres are in Himalayan and Trans Himalayan region, Northeast India, Andaman and Nicobar Islands.
- The trade routes are- (1) from Delhi to Germany, England, USA and Switzerland Japan, Taiwan, Malaysia, Singapore (2) from Mumbai to Europe (3) from Guwahati to Japan Taiwan, Malaysia, Singapore. While Delhi receives contribution from Mumbai, Jammu & Kashmir, Himachal Pradesh, Calcutta receives from Chennai, Sikkim, Shillong and Chennai receives from Andaman and Nicobars Islands.



Gift articles

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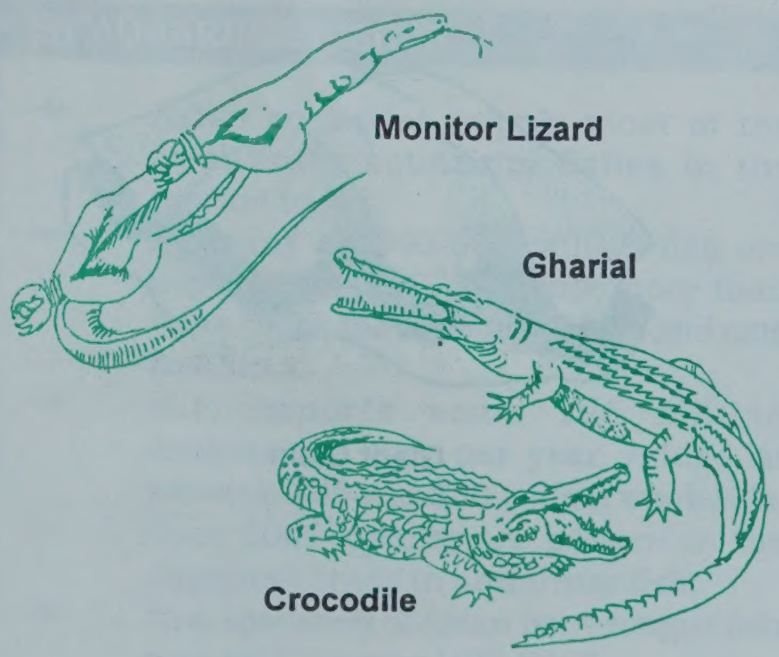

[7] REPTILE SKINS

- It is estimated that India use to export US$ 60 million worth of reptile skins annually when the trade was legal. Today there is no overt trade but illegal trade continues.
- In 1977 when the trade was legal in India, approximately 4 million cobra and rat snake and approximately 10,000 python skins were exported.
- The world wide trade in monitor lizard is today approximately one million skins per year. In 1977 India officially exported approx. 1 million lizard skins.
- 1.5 to 2 million crocodile skins enter the trade annually.
- There are reports of crocodile poaching and smuggling from Andaman and Nicobar Islands.
- In India domestic trade is prevalent in cobras and other snakes with snake charmers and also spiny-tailed lizards for medicinal purposes with traditional roadside vendors.
- The international trade in water monitor skin ranges between 1 to 1.5 million annually.
- Monitor lizard is used for various purposes like the skin for drum head, oil for haemorrhoid treatment and against bacterial skin infection.

Cobra and Python

Reptilian skin products

- Reptile skins are used for manufacturing wallets, belts, shoes, whips and other leather accessories
- Under Wildlife Protection Act and CITES the following reptiles are protected by law, trade in these species is illegal. Marsh crocodile, salt water crocodile, gharial, common monitor lizard, yellow monitor lizard, rock python, cobra, rat snake, russel's viper.
- Processing centres of reptile skins in India are Agra, Kanpur, Calcutta, Indore, Puri, Pune, Mysore and Chennai.

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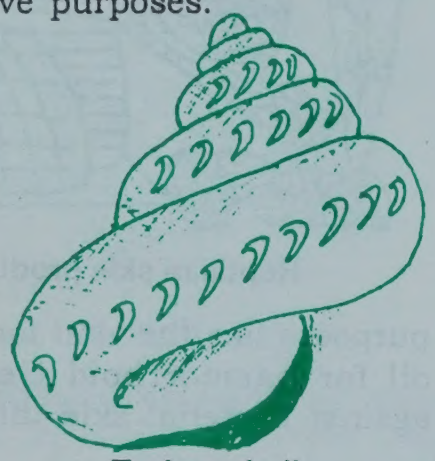
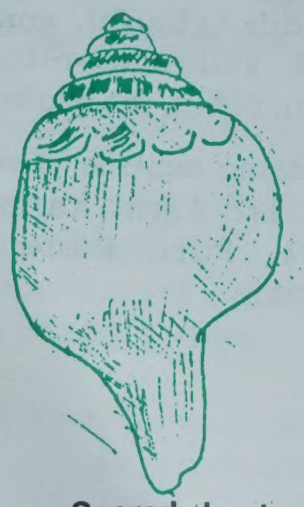
[8] SHELLS

- Shells are divided into five main classes such as gastropods, bi-valves, tuskshells, chiton and cephalopods. About 80% of living molluscs belong to the 'Gastropods' class. Bi-valves comprises the second largest class followed by far less numerous minor classes like tusk shells, chitons and cephalopods.
- In 1996-97 India exported 668 tons of shells worth Rs. 5 crores.
- Often the prohibited species of shells and corals are mixed with other general permissible consignments or labelled as 'shells' to avoid detection by the authorities.
- Commercial Trochus, coral reefs species, was once used to provides material for buttons and was exported from India. It is still being fished in small quantities for decorative purposes.

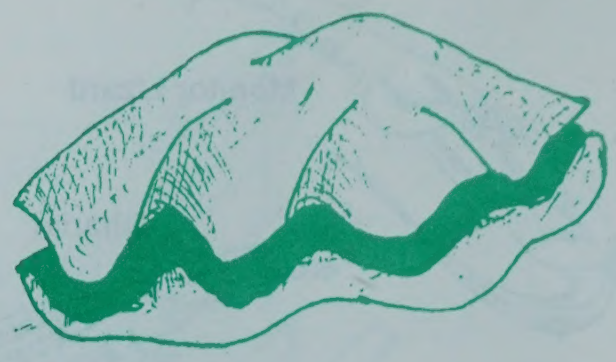


Turban shell

- Turban shells provides mother-of-pearl for making decorative buttons, beads, jewellery. They are much in demand for making curios and utilitarian articles.
- Conches are collected for decorative purposes.



Sacred chank



Giant Clam

- Sacred chanks are exploited for popular West Bengal bangle industry. Imported from Sri Lanka, it is one of the most traded shells. Also used in making ornaments. Used in religious occasions(blown) for producing 'Shankh dhwani'
- Sinistral shells are highly priced for their rarity, also known as 'Valmpuri chank'.
- Giant clams are the largest bivalves in the world and live in tropical seas in the Indo-Pacific. Mostly exploited for edible purposes by the local population

Decorative items made up of shells

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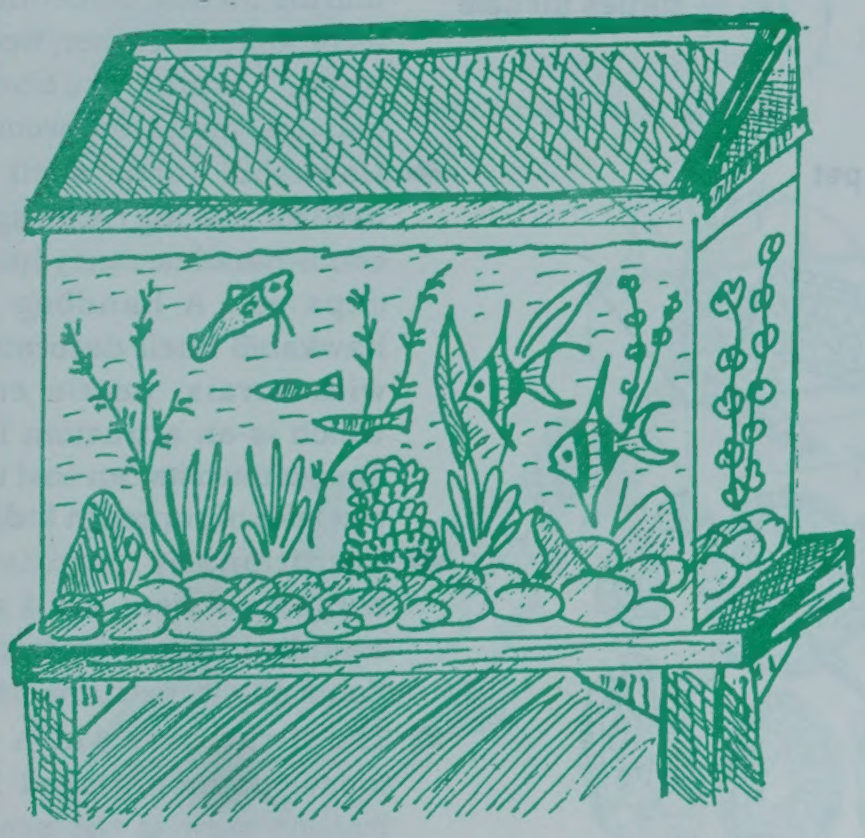
[9] AQUARIUM FISHES

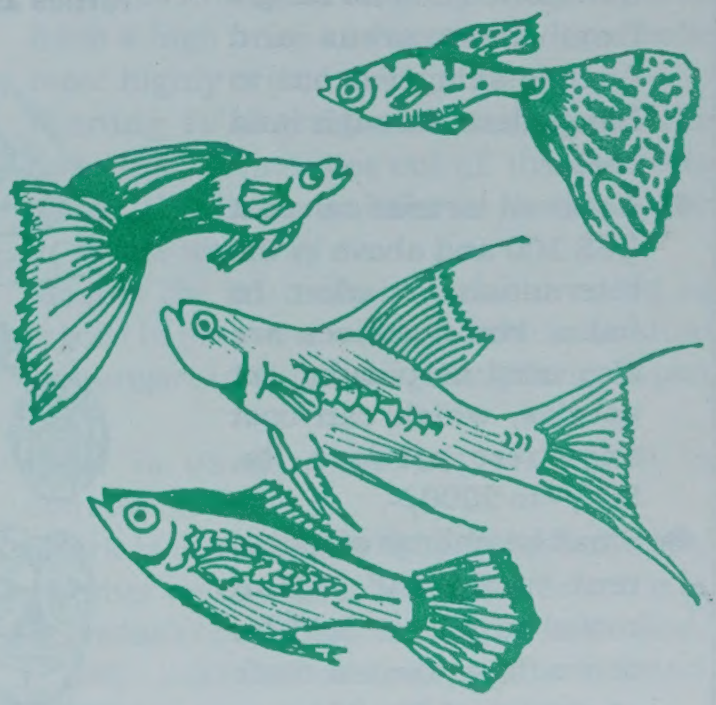
- Asian countries supply most of the freshwater aquarium fishes in the market today.
- As many as 340-500 million fish are kept as pets in USA alone more than three times the number of dogs and cats combined.
- U.S imports some 125 million ornamental fish per year valued at between $25 and $30 million wholesale.
- Over 2000 species are present in the Japanese trade in aquarium fish.
- One specimen of Asian bony tongue fish was sold for over US$ 8000.
- One study indicates that on an average only 300 non food fish of the 1000 taken from the sea survive.
- The total annual world market for aquarium fish is US$ 600 million and is growing by 10-15% per year.
- Singapore is the leading world center breeding tropical aquarium fish for trade. It annually exports over 150 million popular fishes worth $40 million approx. The popular species are guppies, mollies, swordtails, tetras etc.

Fish breeding centres

- India exports aquarium fishes worth Rs. 30,00,000/- on an average annually to various countries including USA, Japan, Malaysia, Nepal, Singapore, Netherlands, Germany etc.



Fish aquarium



Popular fishes

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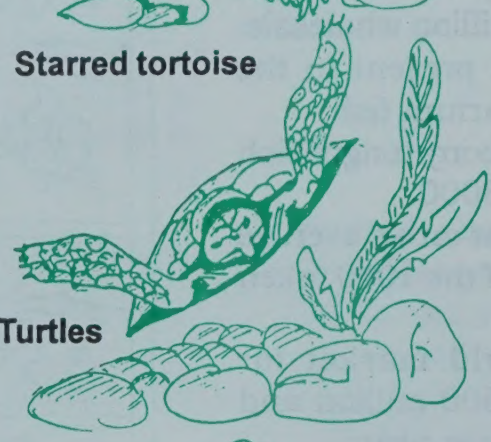
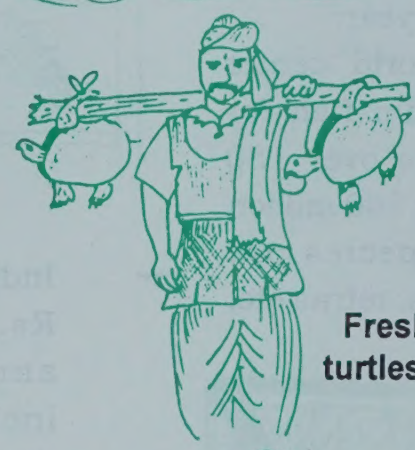
[10] MARINE AND FRESHWATER TURTLES & TORTOISES

- In India, there are 16 species of freshwater and semi-aquatic turtles, 6 species of soft-shell turtles, 4 species of land tortoises and 5 species of marine turtles.
- All are marine turtles are endangered. Of the 5 marine turtles, 3 are traded mainly for meat.
- Although international trade is banned, there are reports of smuggling of turtles from India to Bangladesh for meat and of star tortoises mainly to Middle East for pet trade.
- Turtles are exploited for food as meat, fat and eggs. This trade is more prevalent in the states of West Bengal, Orissa, Northeast, Uttar Pradesh and Bihar.
- Hub of turtle trade for meat is the gangetic belt including U.P, Bihar, part of M.P and Northeastern states. The turtles are transported to West Bengal from these areas and further smuggled out to Bangladesh through land border.
- A starred tortoise can cost US$ 100 and above in the international market. In India, star tortoises are also used as popular pet species, which can cost anywhere between Rs. 500/- to 2000/-.
- Small hatchlings of Indian tent turtle and Indian roofed turtle are sold for domestic aquarium trade at a price of Rs. 25/- per specimen.

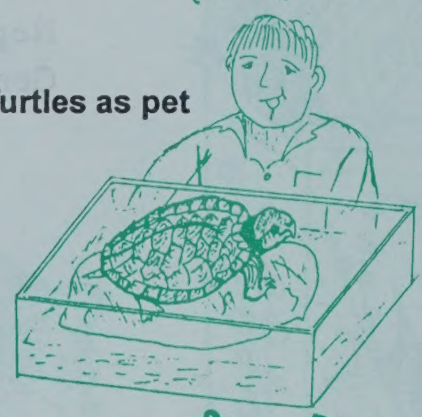
Starred tortoise



Turtles



Fresh water turtles for sale



Turtles as pet

Turtles and tortoise carapace products

- Major centres of smuggling of the tortoises for pet trade are Chennai, Bangalore, Ahmedabad. Both tortoises and turtles are traded as pet to countries like Europe, Middle East and S.E. Asia.
- They are also used in traditional medicines such as shell is used for eye treatment, blood, meat and gall bladder as cures for stomach and skin disorders, and for treating tuberculosis.
- Shells are used as decorative items with silver linings and paints, also used in making of combs and brushes.
- Tortoise shell souvenirs are made up of cleaned-out or stuffed carapaces (shell) and plastrons of either land tortoises, aquatic turtles or marine turtles, sometimes incorporating leather, wool, horn, bone, rubber, plastics, metal and wood.
- Hawksbill turtle shell is used for making handbags, comb-handles, fancy hair-clips etc. A handbag of hawksbill shell decorated with corals, pearls etc. which is an attraction for foreign tourists can cost up to a lakh of rupees in India.
- Traditionally tortoise-carapaces were used as sounding boards for traditional music instruments.
- The turtle skin which is most commonly used in leather-work is the scaly area that covers the front flipper of marine turtles.

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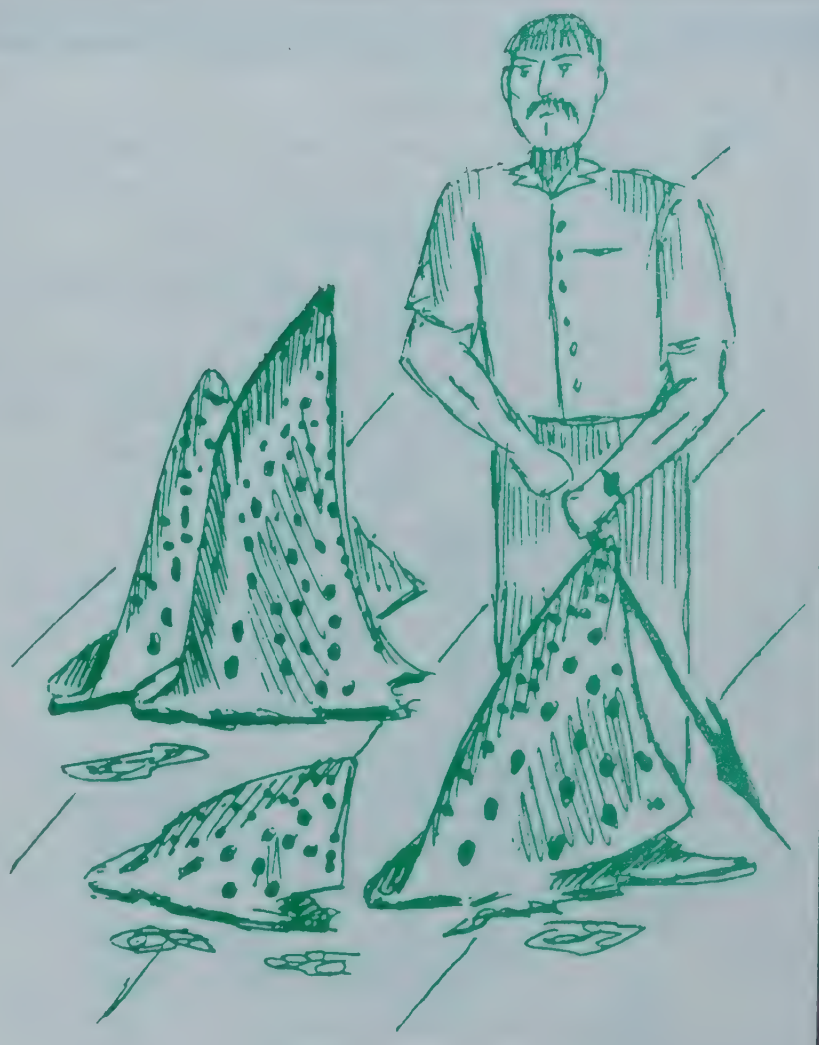
[11] WHALE SHARKS

- Whale sharks are the largest fish in the world, reaching at least 12 m in length and weighing 13 tons, about as large as an adult grey whale.
- These docile sharks are harmless and will allow scuba divers to take rides by hanging onto their fins- the only danger is getting brushed by their rough skin, or accidentally knocked by the huge tail as it swings back and forth.
- These giant fish can cruise at 3 km/h., often near the surface, being large they often have been roamed by ships.
- They live in warm tropical waters in places where there is a good supply of food to support their large bulk, and feed by filtering food out of the water.
- Despite their great size whale sharks feed on plankton (microscopic sea animals), small fish and squid.
- Whale sharks do not bite or chew food, so they do not need their teeth, which are no bigger than a match head.
- Whale shark is the largest species of shark and is declared vulnerable under the IUCN categories.
- India exported about 200 tons of whale shark meat in 1995-96. From India 4-5 consignments of frozen whale shark meat is exported every year.



Whale Shark fins

Shark

- The main consumer is Taiwan where its fresh and frozen meat is very popular.
- Fins are also exported and used for making fin-soup, though the fins of whale sharks are not considered to be of high quality. Whereas fins from other species of sharks fetch a high price and are considered to be most highly priced seafood item.
- Finning is a gruesome act where the fishermen sometimes cut all the fins from which the living animal is thrown back in to the water to die.
- Most of the fin-trade is undocumented as it goes in personal baggage with individual passengers to Singapore, Hong Kong, Japan etc.
- Liver is used to extract oil which is consumed locally.
- Shark is often luxury food in restaurants, whether we choose to eat shark or not, it is important that shark fishing is controlled. If not, these fascinating creatures could disappear from the world's oceans.

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[12] MOST POPULAR WILDLIFE PRODUCTS

(A) TIGER PRODUCTS

- Tiger skins have a ready market and sell at Rs. 5,000-10,000 each in India and can fetch upto 20,000 US$ abroad.
- In 1993 alone, 475 kg of tiger bones and 13 tiger skins were seized.
- Tiger parts that are used in the trade includes whiskers, eyeballs, brain, bones, claws, skin, hair, penis and blood.

Tiger products

- Skins and heads are used as trophies, claws are used as talisman, bones and skulls are used in traditional oriental medicine, fat is used in balms and potions, penis is used as an aphrodisiac and whiskers are thought to cure toothaches.

(B) IVORY

- Only male Asian elephants have tusks. The mean weight of a tusk is approximately 9.5 kg. The price of ivory in India is about Rs. 5000/- kg.
- From 1977-86 about 190 pair of tusks were lost to the ivory trade from Kerala, Karnataka and Tamil Nadu. In 1981-82, 64% of elephant mortality rate in South India was due to poaching.
- In 1989-1995, 41592 kg. of ivory was seized in various countries. In the same period there were 141 seizures of ivory in 24 countries. Out of these 13 was in India.

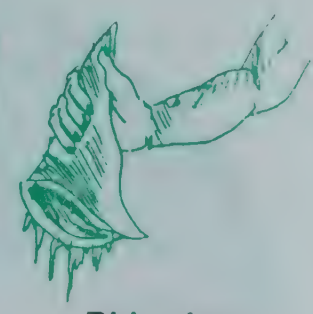
Ivory products

- Worked ivory is used in the form of bangles, bracelets, statues, carved tusks, chessboards etc. Powdered ivory is used for medicinal purposes.
- The erstwhile dealers of ivory and ivory products have sizeable stock of ivory with them, which is sealed. Following a ban on ivory trade in 1991, display of ivory items in commercial outlets is prohibited.

(C) RHINO HORNS

- Due to the trade in rhino horns, all 5 species of rhino (3 in Asia, 2 in Africa) are endangered. Between 1994-1996, 227 rhinos were killed in Kaziranga National Park (Assam)
- Mean weight of Asian Rhino horn is 800 gm to 1 kg. Each horn is worth about Rs. 2-3 lakhs in India and much more outside country. In 1994 the price of one rhino horn in the international market was Rs. 3-5 lakhs.
- Asian rhino horn or "fire horn" costs 5-10 times more that African rhino horn or "water horn" in Taiwan and China.
- The Asian rhino horn is used in traditional medicines in countries like China, Taiwan, Japan and South Korea.

Rhino



Rhino horn

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- The African rhino horn is made into daggers, handles in Yemen and Oman. The traditional daggers called as 'Jambias' and 'Khanjars' have carved rhino horn handle. Also blades, belts and shields are made using the rhino horn.

Rhino horn product

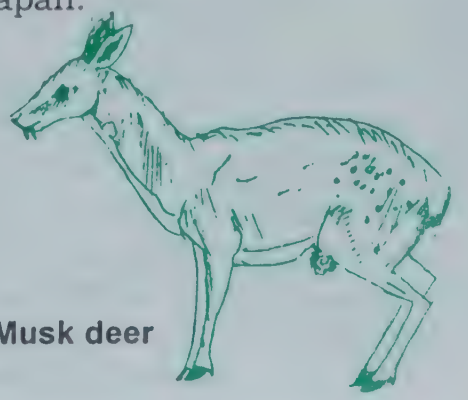
(D) SHAHTOOSH

- The wool marketed as the "Shahtoosh" or the "ring wool" is the under wool of Tibetan Antelope. Very fine quality of shahtoosh shawls is woven from this wool. The animal is commonly known as Chiru and in India the migratory population is known to occur only in Daulatbeg oldi area in extreme northeastern corner of Ladakh during summer.
- A shahtoosh shawl can pass through a ring. Thus the name given to it is 'Ring shawl'. Shahtoosh is collected from Tibet and woven into shawls in Kashmir
- Only about 150 gm. of wool is procured from a single animal.
- Once abundant it is estimated that not more than 200 chirus visit the region during summer. Hunting for meat, horns and wool is a major threat to chiru. As it is protected under Wildlife Protection Act, hence trade in its wool is banned.
- Shahtoosh shawls can cost between Rs. 50,000-1,00,000 depending on workmanship.
- In Delhi, during 1993-1998, there have been atleast 8 seizures, which included 600 kg of wool and 250 shawls.
- The focal point of the trade route is Delhi, which receives raw materials from Srinagar, Leh, Nepal, Darjeeling, and the finished goods are supplied to Europe, USA, Japan and Hong Kong.

Cheeru antelope

(E) MUSK

- Musk is extracted from the musk pod of male musk deer, which is an endangered deer found in the Himalayan region.
- The musk gland helps in maintaining a social contact among the deer, unfortunately the secretion from this gland is a valuable fixative in the perfume trade and the hunters for its musk pod heavily poach this little shy deer.
- Annual trade in musk is estimated to be US$ 4.5 million. International price for musk is US$ 5000/ 10 gm. At traders level the price of musk vary from Rs. 4000-5000/10 gm.
- Musk is used in making perfumes, soaps and also in medicines
- In China several factories are reported to be using musk. A scheme has been in operation to keep musk deer in captivity and extracting the musk secretion from the male deer without having to kill them. But it is not known whether the Chinese have succeeded in breeding the animal in captivity.
- The trade routes are Amristar, Delhi, Kolkatta from where supplies go to Pakistan, Kathmandu, Myanmar, Hong Kong, Japan.



Musk deer

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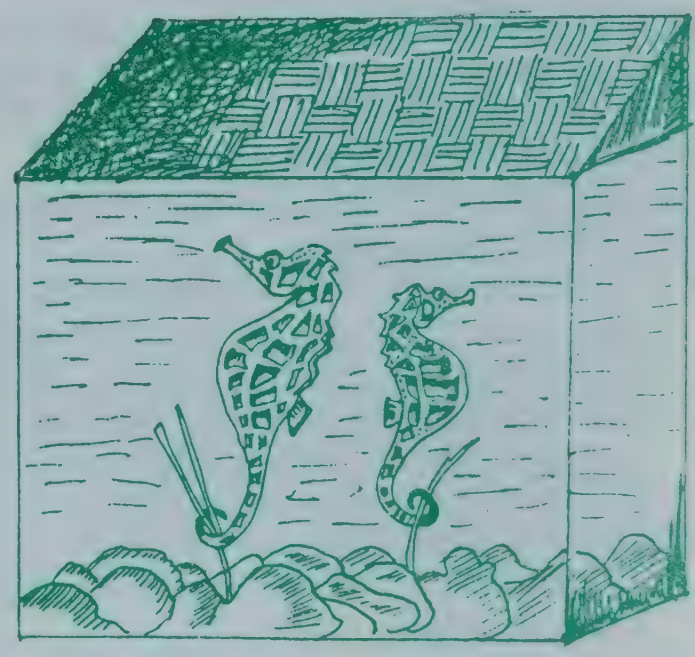
[13] LESSER-KNOWN WILDLIFE PRODUCTS

[A] SWIFTLET'S NESTS

Swiftlet's nests

- Swiftlet's nests are made of saliva, the salivary glands enlarge during the breeding season. The nest is constructed by using saliva, feathers, grass and moss.
- The nest of pure saliva (50% protein) much prized as a culinary item by Chinese for birds' nest soup and are commercially exploited.
- Collection of edible Swiftlet's nests has been documented from Andaman and Nicobar Islands.
- The collection of nests has caused a decline in population of Swiftlets estimated to be more than 80% over the last decade.
- Collection of nests goes unabated and total nest collection is anywhere between 400-700 kg per annum.
- A kilogram of top quality white nests can fetch as much as Rs. 36000 in Hong Kong.
- In 1989 Japan imported 19.9 million nests with net weight of 159 m tons.
- Singapore is the major destination for nests from Andaman and Nicobar Islands whereas Hong Kong, Thailand and other South-east Asian countries are also recipients of smuggled nests from India.
- The nests of four species of Swiftlets are harvested for consumption as food, tonic and medicine and of these, two species are found in India Indian Edible-nest Swiflet and White-nest Swiflet which is endemic to Andaman and Nicobars.
- Swifts and swallows are the only birds not protected by the Indian law, although local rules prohibit trade.

[B] SEA HORSES


Sea Horses

- Atleast 10 species from Indo-Pacific are used in traditional Chinese medicine.
- India is one of the largest known exporters and it exported 9 tons of sea horse in 1996-97 worth Rs. 19 lakhs.
- China is the largest single user of the seahorses with total annual consumption of 6 million sea-horses
- Atleast 32 nations around the world are involved in this trade. Along with China, Hong Kong and Taiwan are main importers.
- Aquarium trade accounts for another million sea horses.
- Sea horses sold in Hong Kong are bleached and fetch more prices. In 1995 cost of bleached was US $ 1200/ kg, whereas unbleached was US$ 280/ kg.
- The main market for the live sea horses, especially for aquarium trade is North America, Europe, Japan and Taiwan.
- Besides being used in medicines, sea horses are used as souvenirs and traditional jewelry. In Taiwan it is used as aphrodisiac.
- Also used as live specimens for aquariums, sometimes also as food.

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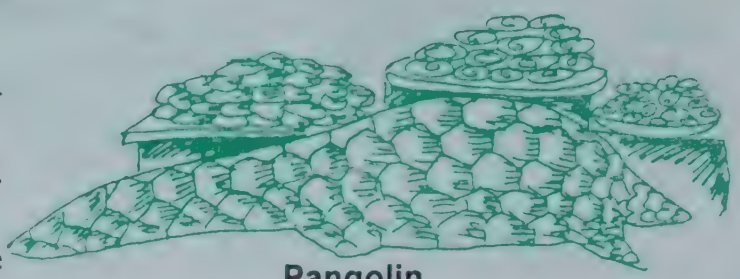
[C] SEA CUCUMBER

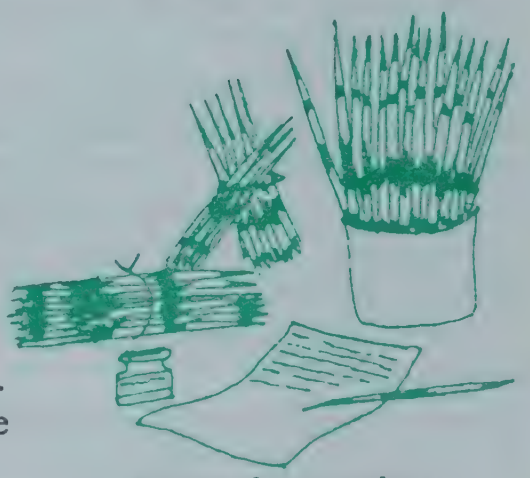
- All over the world there are 650 species of sea cucumbers. Seas around India have nearly 200 species of which 75 are from shallow waters within depth of 2 m. Of these 13 species are of commercial value.
- Popularly known as Beche-de-mer, is used for edible purposes.
- In 1989, India exported nearly Rs. 1 crore worth of Beche-de-mer mainly to Singapore.
- *Holothuria scabra* and *H. spinifera* are two most traded and endangered species.
- Singapore gets its imports from South East Asia; Hong Kong gets its supplies from South West Indian Ocean. Singapore re-exports to Malaysia and Hong Kong to Thailand and USA.
- Singapore consumes 80 to 100 tons of sea cucumber annually. Philippines are the largest supplier to Singapore. Other suppliers are India, Sri Lanka and Sabah.
- Prices have increased from $ 2.95/ kg in 1974 to above $ 16/kg in recent years in the Singapore market.
- In 1982 Government of India had put a ban on the export of Beche-de-mer below the size of 7.5 cm.
- In Andaman and Nicobar Islands, fishing is totally banned.

[D] HAIRS BRISTLES, SCALES AND FEATHERS



Pangolin

- Bristles of hogs, pigs and mongoose are used in paintbrushes, shaving brushes etc.
- In 1992, the United Kingdom alone imported nearly 10,000 kilos of bristles from India.
- Bristles can cost upto Rs. 7500/-kg in the international market.
- While Kanpur and Jabalpur are the main trade centres for bristles, Mumbai is the main shipping port.
- The scales of pangolin are used in traditional medicine. The price of one dead pangolin can be upto Rs. 1600/-
- These scales are also shaped into rings to induce, magical charms. The rings made from the scales are sold for 3-5 per piece.
- The flesh of pangolin is eaten by some communities.
- Quills of porcupine are used in some traditional medicines.
- These are also used for writing purposes. The price of the quills can vary from Re. 1 to Rs. 5 per piece.



Quills of porcupine

- Shed feathers of Indian peafowl are allowed for export under the licensed quota system.
- Feathers are exported in the form of partition screens, belle dress and hand fans.
- Feathers of some other birds are also smuggled out. These include, Grey Jungle Fowl, Red Jungle Fowl, Green Pea fowl, Peacock Pheasant and Egrets.

Peacock feathers

Hair bristles of hog and mongoose

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[14] MEDICINAL PLANTS

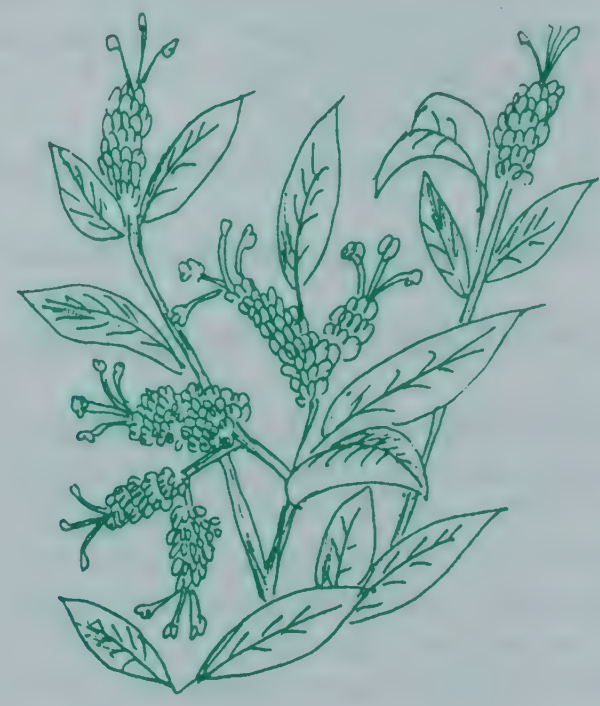
- According to the World Health Organization (WHO), more than 4 billion people rely on herbal medicines to some extent.
- It is estimated that 25% of all prescription drugs are based on plant-derived chemicals. The WHO has listed 21, 000 plants that have reported medicinal uses around the world.

Herbal medicines

- India and Brazil are the largest exporters of medicinal plants.
- In India, the collection of medicinal plants continues unabated especially in Northeast, the Western Himalayas and the Western Ghats.
- India has a rich medicinal plant flora of some 2500 species. Of these, 2000 to 2300 species are used in traditional medicines while at least 150 species are used commercially on a fairly large scale.
- The Himalayan Yew (*Taxus wallichiana*) is much in demand in U.S.A. and Germany. In 1994 U.S.A. imported 1300 tons from India. Some quantities of this plant are smuggled into India from Nepal.

Plant parts used as medicines

- The notion that a plant collected from the wild is more efficacious than cultivated one-pose problems for plant conservation. Hence the wild plant may fetch three times as much as a cultivated variety.
- Medicinal plants are traded as chips, pulp, bark, fruit, root, wood, herb, flower, seed, petals, rhizomes, nuts, shells etc. The medicines can be in the form of extracts, capsules, powder, balm, tablets etc.



Indian serpent root

- Plants that are in trade are Indian Birthwort (*Aristolochia indica*), Himalayan Mayapple (*Podophyllum hexandrum*), Kutki (*Gentiana kurroo*), Indian Serpent root(*Rauvolfia serpentina*), Yam (*Dioscorea deltoidea*), Himalayan Spikenard (*Nardostachys grandiflora*), Golden Moss (*Cibotium barometz*), Yew (*Taxus wallichiana*) and Kutki (*Picrorhiza kurroa*). These medicinally important plants are highly endangered and are protected under Wildlife Protection Act.
- The Indian Serpent root is used as valued treatment for intestinal disorders, as anti-hypertensive and sedative. Indian Birthwort's roots and rhizomes is used for treatment of leucoderma and the leaf juice is considered an antidote for cobra bite. Poisonous tubers of Yam are the main raw material for the production of diogenin in India. Also used as vermifuge. Leaves and bark of Yew is used for manufacturing taxol and baccatin.

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[15] ORNAMENTAL PLANTS

- It is estimated that 1 in 10 recorded wild plant species is either rare or endangered.
- The world market for wild plants for decorating houses and gardens is large, as trade among collectors adds to the peril of species that are rare and difficult to cultivate.
- It is estimated that over 10 million cactus plants and 3 million orchids enter the world trade each year. Of these, 30,000 cacti and 1.5 million orchids are obtained from the wild.

Lady's slipper orchid

- Orchids are the plants that are most in demand in the world trade due to their spectacular beauty and exotic aura. Orchids like the very rare Lady's Slipper (*Paphiopedilum rothschildianum*) can fetch as much as US$ 5,000 a piece.
- Lady's Slipper orchids and the red and blue Vandas are highly prized among Indian orchids.
- Orchid trade centres in India include Kalimpong, Shillong and Trivandrum.
- Wild orchids are often smuggled out of the country as cut flowers by wrongly declaring them as lilies or other exotic flowers.
- Artificial propagation of orchids is a complex and time-consuming affair and there is thus an ever-present demand for wild orchids.
- Pressures due to over collection have been disastrous for plants like cycads as well, with 50 of the 130 species being declared vulnerable or endangered by the IUCN.
- Rare Cycads (*Cycas beddomei*) are also in the plant trade, many of which come from wild sources.

Pitcher plant

- Genus *Nepenthes* (Pitcher Plants) comprises roughly 70 species of carnivorous, usually climbing plants which are distributed from Madagascar and the Seychelles to India, Australia and New Caledonia. In India, *Nepenthes khasiana* is the only species occurring in wild. Confined to the Khasi hills in Assam, Northeastern India. Young plants are available in the trade.
- Carnivorous plants such as the Sundew, Bladderwort and Venus fly trap are also traded, with over a million plants sold every year in Europe alone. There are artificially propagated specimens in the trade although wild collection continues.
- To guard against loss of wild stocks, some of the more popular horticultural plants including all the orchids and cacti; several aloes, palms and cycads; and a few insectivorous plants are listed under CITES and also protected by national laws.

Cactus

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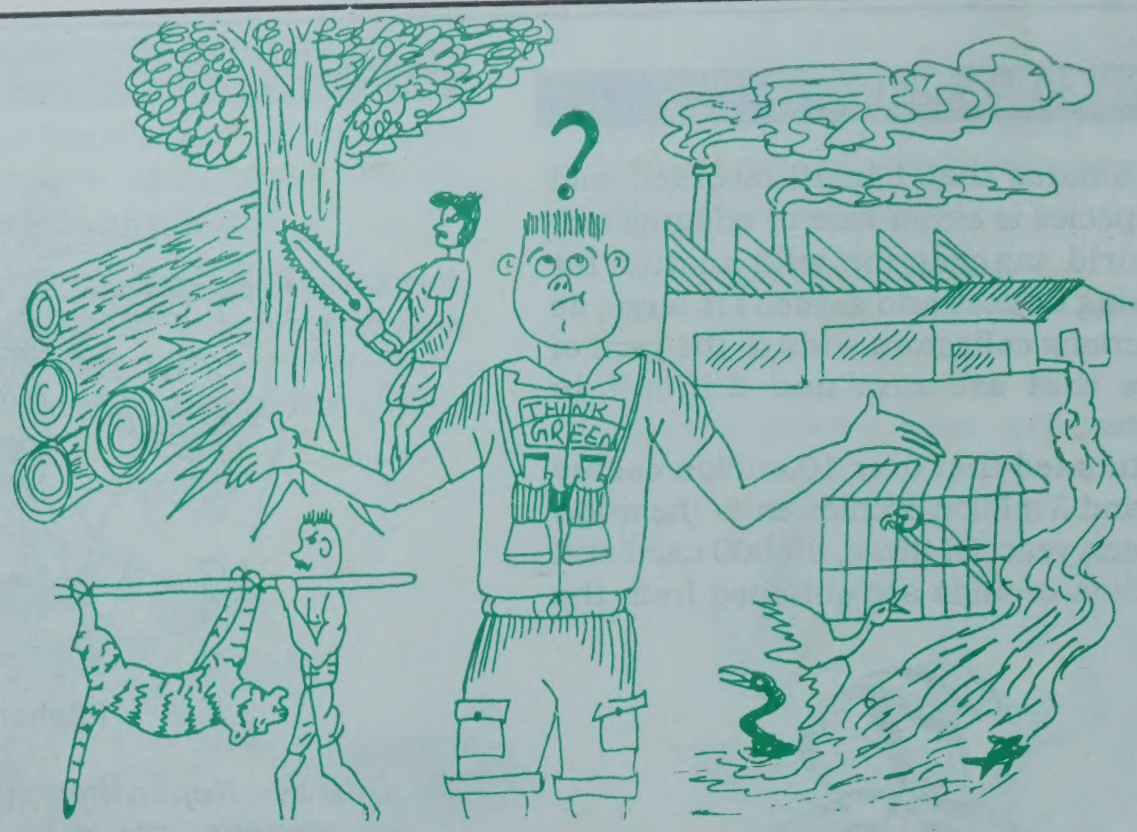

HOW CAN YOU HELP?

If you find any wildlife trade in your locality you can help booking the culprits by reporting it to the concerned body. Wildlife trade in India is primarily the jurisdiction of the Directorate of Wildlife Preservation, Government of India. Any offences detected, information received etc. must be conveyed to their officers at the earliest. Any offence can also be brought to the notice of the local Chief Wildlife Warden (If the offence is that of the Wildlife (Protection) Act) or the Customs Officer (if the violation is of the Customs Act or Export Import Policy). The local police, paramilitary etc. can be of assistance in special cases. Given below are few of the addresses, which could be contacted:

- Additional inspector General (Wildlife)
  MOEF Government of India
  Paryavaran Bhawan, CGO Complex,
  Lodhi Road, New Delhi- 110003.
  Tel: 011- 4362785/ Fax: 4363918
- Inspector General of Forests
  MOEF Government of India,
  Paryavaran Bhawan, CGO Complex,
  Lodhi Road, New Delhi- 110003.
  Tel: 011-4361509/ Fax: 4360678
- Regional Deputy Director
  Wildlife Preservation Northern Region
  Bikaner House, Barracks No. 5,
  Shahjahan Road, New Delhi- 110011.
  Tel: 011-4384556/ Fax: 4360678
- Regional Deputy Director
  Wildlife Preservation Eastern Region
  234/4, A.J.C Bose Road,
  2nd M.S.O Bldg., Nizam Palace.
  Kolkatta – 700020.
  Tel: 033-478698/ Fax: 378387
- Regional Deputy Director
  Wildlife Preservation Southern Region
  C-2-A, Rajaji Bhawan, Besant Nagar,
  Chennai- 600090.
  Tel: 8253977
- Regional Deputy Director
  Wildlife Preservation Western Region
  11, Air Cargo Complex Sahar,
  Mumbai – 400099.
  Tel: 022- 6328529
- Collector of Customs (Bangalore)
  Central Revenues Buidling
  P.B. No. 5400, Queen's Road,
  Bangalore- 560001.
  Tel: 0812-564473/564417
  Fax: 564073
- Collector of Customs (Mumbai)
  New Customs House
  Ballard Estate
  Mumbai- 4000038.
  Tel: 022-2618231-39
  Fax: 022-2614357

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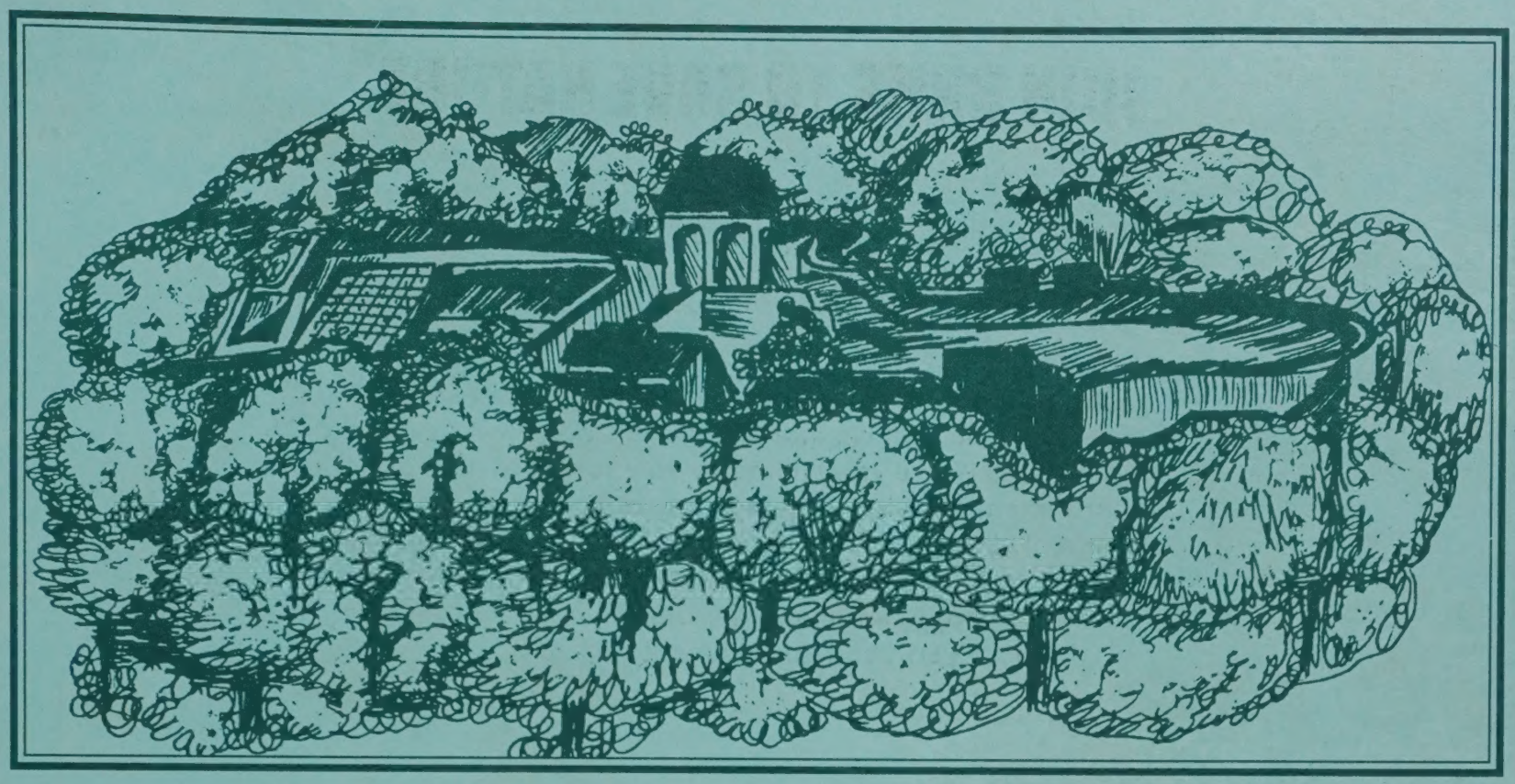


CONSERVATION EDUCATION CENTRE

Nature education has always been, a primary concern of the Society. The Conservation Education Centre (CEC) has been established in Mumbai at Goregaon end to develop a broad-based support of people for conservation of biodiversity. The Centre conducts innovative and interactive educational programmes for different target groups such as children, teachers, teacher trainers, NGOS, corporate groups, government officials. The Centre has been designing and disseminating educational resources to spread awareness about biodiversity conservation. The versatile and enthusiastic team of educators make the joy of learning even more enriching. You are welcome to bring your students for a day's outing at our Centre. Let your students experience nature at close quarters !

For Details Please Contact:

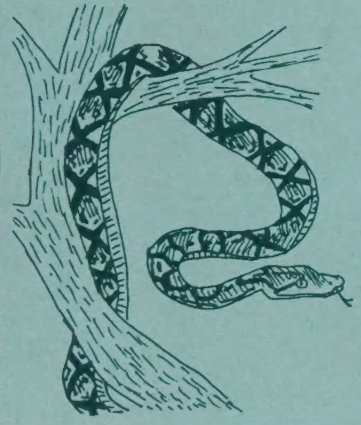
Bombay Natural History Society, Conservation Education Centre,
Near Film City, Gen. Arunkumar Vaidya Marg,
Goregaon (East), Mumbai - 400 065.
Tel.: 022 - 2842 1174 / 2840 2946
e-mail: cecbnhs@vsnl.com

JOIN BNHS TO SAVE NATURE

BNHS Mission

Conservation of Nature, primarily biological diversity,
through action based on
research, education and public awareness.

Are you concerned about the endangered wildlife? Do you feel sad that we lost Cheetah? Does the tree cutting bothers you? Are you willing to do your bit to save your environment? Are you ready to adopt ecofriendly ways in your daily life? If the answers for these questions is YES, then we need you as our member. Today like-minded and concerned people are making a difference to save nature. Even you can make a difference!



Bombay Natural History Society

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